

*Xiphophorus maculatus*, Coatzacoalcos Platy



Female (Sp-9)



Male (Sp-9, ArP-6)

Strain Code: Cp

Phenotypes scored: Anal fin color, anal red (Ar); spotting pattern #9 (Sp9); wild type body color (+); tail spot pattern, complete crescent (Cc); age of maturation: early (P-1), late (P-6).

Introduction:

Cp is a strain of *X. maculatus* collected from the Coatzacoalcos drainage basin. Three distinct Y-chromosomes are maintained in this stock (Kallman and Borkoski, 1978; Bao and Kallman, 1982). One Y-chromosome carries an allele for a specific spotting pattern, Sp9 ( $Y^{Sp9}$ ), which results in a concentration of black pigment spots on the operculum and along the midline region of the body. This phenotype is limited to platyfish from this drainage. The Sp9 fish are small in size, as this spotting allele is linked to a P-allele (P-1), that results in early maturation, and thus, small size. A second Y-chromosome carries an allele for red anal fin, Ar. In females, this pattern is faintly expressed at 6 to 9 months of age as sparsely arranged, red spots on the proximal portion of the anal fin rays. This phenotype must be scored under a microscope at 10x magnification. The gonopodium appears yellowish in males carrying an Ar allele. Males must also be scored under 10X magnification for Ar. A P-allele for late maturation, P-6, is linked to the Ar allele ( $Y^{ArP-6}$ ). Fish carrying this phenotype should be larger in size. The third Y-chromosome carries only the wild type allele for color, i.e., no pigment pattern ( $Y^+$ ). The Cp stock is fixed for the tail-spotting pattern, complete crescent (Cc).

Sex determination / sexing:

The sex determination mechanism in this stock is WY / YY. Immature fish should be identified as to sex at 6-8 weeks of age, because the fish with the P-1 allele (linked to Sp9)

mature early. However, because the later maturing P-6 allele is carried on the  $Y^{ArP-6}$  chromosome, all fish should be closely observed for any late developing males. Fish are generally mature and ready to mate at about 4 to 5 months of age.

Scoring:

Fish are scored with a dissecting microscope, particularly when scoring Ar. Ar females and males can be scored using at least 10x magnification and display single orange-red pigment cells along the proximal portion of the anal fin rays. Sp9 and Cc patterns are generally scored using the unaided eye.

Maintenance:

This stock is maintained by establishing reciprocal crosses between parallel lines. Each mating should include all three Y-chromosomes (including  $Y^+$ ), but any particular Y-chromosome should be represented in a mating only once. Matings that result in both  $WY^+$  females and  $WY^{ArP-6}$  females should be avoided when possible, as it is most difficult to distinguish between these two phenotypes. It is a good rule to score this stock when mating the fish and also re-score the fish when the matings are being fixed or discarded, if not earlier.

Stock source:

Prof. Klaus Kallman, the New York Aquarium, received 2/28/93.